

IPP CAPITAL PROJECTS OVER \$100K SINCE JAN 1990

(\$1,000's)

Project #	W.O. #	Completion Date	Title	Budget (\$1,000's)	Short Description of Work
IGS08-02	08-37129-0	Jun-14	Scrubber Combined Renovation Project	17,554	Renovate all 12 scrubber modules, remove and repair scrubber laterals, recoat internal surfaces with rubber. Replace broken or plugged nozzles. Repair corrosion on reaction tank and recoat.
IGS09-09	09-77586-0	May-13	Cooling Tower Mechanical Renovation †	6,105	Replace embrittled plastic drift eliminators and distribution system piping
IGS09-08	09-68839-0	May-12	Generator Breaker Replacement	7,495	Replace Units 1 and 2 generator circuit breakers because manufacturer has quit supporting this model with parts and service.
IGS09-14	09-66991-0	Jun-11	Increase Ash Water Make-Up Capacity	100	Study only looking at options for increasing ash water make-up flow and using ash water to replace recovered water usage due to line blockage.
IGS08-09	03-91689-0	May-11	Coal Feeder Weigh Bridge and Drive Replacement	499	Replacement of coal feeder belt SCR motor drives, motors, chain drives, and the single coil/cantilever weigh bridges.
IGS08-13	08-38350-0	May-11	Units 1 & 2 Generator Hydrogen Purity & Gas Monitor System Re	280	Purchase and install new hydrogen purity monitors for the generators
IGS09-02	03-94387-0	May-11	Generator Stator Rewind	16,700	Rewind Unit 1 and Unit 2 generators stators due to concerns over continued stator bar and fitting leakage.
IGS09-03	09-68785-0	May-11	Replace LP Turbine Last Stage Blading	11,123	Replace low pressure turbine last-stage buckets on both units due to leading-edge erosion which is deep enough to propagate surface cracks which could cause bucket tip failure
IGS09-10	09-68321-0	May-11	Replace Electromatic Relief Valves	252	Replace obsolete electromatic relief valves on both units. Manufacturer stopped supporting with parts.
IGS08-12	08-38361-0	May-11	Generator Core Monitor & Pyrolylate Collector Replacement	160	Replaced obsolete generator core monitor and pyrolylate detector. Parts no longer available for repair.
IGS09-07	09-68783-0	May-11	Variable Clearance LP Packing and Radial Spill Strips †	1,631	Install advanced design packing and spill strips instead of conventional packing which will improve net plant heat rate 0.36 percent by reducing steam leaks between LP turbine stages
IGS09-11	09-66504-0	Dec-10	Replace Lower Waterwall Tube-to-Header Welds	167	Tube sections will be cut out of all tubes at the header and reinstalled correctly. Repair of original construction defect.
IGS09-13	08-54856-0	Dec-10	Replace Condenser Cathodic Protection Systems	150	Replace obsolete annunciator and controls on Unit 2 condenser cathodic protection system. Use removed parts to keep Unit 1 system in-service.
IGS10-02	10-10780-0	Dec-10	Unit 2 Generator Field TIL 1292 Inspection	910	GE recommended inspection and crack checking of rotor teeth. All slot dovetails will be eddy-current inspected, the number one coil slots will be machined per TIL 1292 and new aluminum wedges will be installed in the central portion of the number 1 coil slots.
IGS08-08	08-38376-0	Dec-10	Trolley Beam for Arch Sootblower Removal	282	Installed lifting beam at boiler arch to improve safety while removing arch sootblowers
IGS09-06	08-64853	Dec-10	Physical Security of Critical Cyber Assets	2,880	Installed physical and electronic security devices to comply with NERC Critical Infrastructure Protection Standards.
IGS09-15	08-63308-0	Dec-10	Redesign Pugmill Mixers	162	Redesigned pugmill mixer drives to reduce vibrations on gears and reduce maintenance costs.
IGS07-11	02-52506	Dec-10	Replace Feedwater Heater Alternate Drain Valve Level Controls	368	Replace Units 1 and 2 feedwater heater alternate drain level torque tubes and controllers
IGS04-02	04-24887-00	Dec-10	Concrete Water Lines Repair and Protection	11,730	Installed cathodic protection on the circulating water lines and repair the compromised underground concrete pressure pipes with carbon fiber.
IGS05-13	06-85034	Sep-10	Replace Surface Water Supply Line	2,230	Replaced surface water supply line from the On-Site Reservoir to Water Treatment. Pipeline was failing prematurely due to corrosion.
IGS08-04	99-76607-0	Jun-10	Compressor Controls Upgrade	290	Replaced compressor controls to gain efficiency and reduce power costs
IGS07-05	07-05626-0	Jun-10	Stack Mercury Analyzer	1,525	Installed mercury analyzer on stack along with new electrical building for equipment.
IGS05-08	05-46701-0	Jun-10	Replace Obsolete Vibration Monitoring Equipment	1,100	Replaced vibration monitoring systems that were obsolete and no longer supported by manufacturer with parts.
IGS08-15	07-35656-00	Jun-10	Replacement of 10th Floor Boiler Grating	142	Installed higher capacity grating on boiler 10th floor to handle loading for staged outage materials.

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IGS08-03	08-38362-0	May-10	Ground Water Remediation	850	Drilled ground water remediation wells south and west of the bottom ash/ash recycle ponds. Installed pumps, power, and piping to draw the water from the wells and use in existing plant processes.
IGS08-06	07-34519	May-10	Switchgear Remote Racking Device	200	Purchased remote racking devices for switchgear to reduce arc flash intensities and reduce electrical switching hazards for employees.
IGS09-12	09-67131	Feb-10	Simulator Upgrade to Match Units	155	Upgraded simulator to match current operating configuration. Needed as test bed to comply with NERC Cyber Security Standards
IGS08-22	08-63238-00	Nov-09	Circulating Water Acid Tanks	372	Replaced Circulating Water Acid Tanks because corrosion on walls was thinning to the point of failure
IGS03-06	03-85117-0	Jun-09	Modicon Upgrade	1,170	Replaced obsolete Modicon control systems in various locations and used removed parts as spares to maintain other systems.
IGS07-18	08-37718-00	Jun-09	Plant Air Modifications	723	Replaced plant air dryers to heated air regeneration to reduce amount of plant air usage and restore redundancy to compressed air system.
IGS08-20	08-39480	May-09	Modicon Upgrade	1,400	Replaced obsolete Modicon control systems in various locations and used removed parts as spares to maintain other systems.
IGS05-06	05-54059-0	May-09	BFPT Controls Upgrade	1,480	Installed redundant electronic speed and operational protection controls on all boiler feed pump turbines to reduce inadvertent trips from control device glitches.
IGS05-03	05-46171-0	May-09	High Pressure Heater Alternate Drain Valve Replacement	586	Replaced high pressure heater alternate drain valves with different trim design and valve body material due to concerns with valve body failing on one valve.
IGS07-04	07-23767-0	Apr-09	PLC Upgrade to DCS I/O (Phase I)	4,150	Replaced Modicon PLC control systems with Distributed Control System I/O because the original systems were no longer supported by manufacturer and parts were becoming difficult to maintain.
IGS08-07	08-38437	Apr-09	Online DGA Monitoring on GSU Transformers	150	Installed dissolved gas monitoring equipment on generator step-up transformers.
IGS07-03		Dec-08	Sludge Conditioning Modifications	1,920	Installed hydrocyclones and new polymer feed system in sludge conditioning to reduce loading on thickeners.
IGS08-10	08-37784	Nov-08	Replace CO2 Analyzers and Supporting Equipment	100	Replace the CO2 analyzers on the stacks and scrubber inlets of both units along with the dilution air clean-up and CO2 removal systems. Existing analyzers were obsolete and no longer supported by manufacturer.
IGS05-04	05-47866-0	Nov-08	Install RO Unit Before Demineralizers	330	Installed Reverse Osmosis unit ahead of existing demineralizer drain for boiler water treatment. Justified based on reduction of chemical usage and associated costs.
IGS07-12	07-09077-0	Sep-08	Site HVAC Controls Upgrades	185	Replaced HVAC Controls in Administration Building
IGS01-03	01-19208-0	Jun-08	Distributed Control System (DCS) Replacement	15,040	Replaced Distributed Control System (DCS) on both units. The existing hardware and software were no longer supported by the manufacturer.
IGS08-05	07-09075-00	May-08	Replace Essential Service Inverters	250	Replaced both essential service inverters on Unit 2. Each inverter contains a ferroresonant transformer which are no longer available for purchase, nor are they rebuildable. Removed parts used to maintain Unit 1 inverters.
IGS07-02	06-03474-0	May-08	Unit 2 Burner Injector Replacement	2,579	Replaced burner injectors and changed out long sweep elbows for flat back elbows. Resolved erosion concerns with burner injector barrel and elbow. Partially paid by Siemens as part of settlement for pending lawsuit from project IGS03-04
IGS07-06	07-15808-0	May-08	Cooling Tower Fan Stack Repair	755	Structural repair of cooling tower fan stacks to prevent concrete from spalling off and damaging fan blades.
IGS07-15	06-86739-00	Mar-08	Install Safety Showers at Ash Water Recycle Pump Bldg	114	Installed safety showers at Ash Water Recycle Building. Could not keep portable showers reliable.
IGS07-07	07-17636-0	Nov-07	External Horizontal Chimney Repair	600	Recoating of horizontal chimney stack from the scrubber buildings to the stack.
IGS07-08	07-17641-0	Nov-07	Wastewater Line Replacement	185	Installed spool pieces in pipeline from Waste Water Holding to Evap Ponds to facilitate mechanical cleaning of scale.
IGS06-02	06-86679	Aug-07	Air Line to Coal Yard	100	Replaced Drisco pipe underground air line to the coal yard because the pipeline was failing due to oxidation of the plastic.

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IGS06-05	06-86652-0	Jun-07	Coal Yard Dust Collector Controls and Upgrades	232	Installed additional instrumentation on all coal yard dust collectors to improve control and eliminate nuisance alarms. Also installed deflector plates to prevent coal from impinging on the bags.
IGS02-07	02-53663	Jun-07	ID Fan Drive Replacements	8,715	Replaced control components of the ID Fan variable speed drives. The manufacturer of the drive control components stopped supporting this system with spare parts and technical assistance.
IGS03-09	03-93810	May-07	Flame Scanner Replacement	835	Replaced flames scanners on both units. The existing flame scanners were expensive to maintain and parts were difficult maintain. The new flame scanners are better at discriminating between the coal and oil flames and between the opposed wall burner flames. They can monitor and detect each flame type separately by frequency spectrum. This improves the safety of boiler operation.
IGS03-05	03-94387	Apr-07	Generator Excitation Systems and Unit 1 Field Rewind	11,405	Replaced generator excitation control system on both units because manufacturer no longer supported the existing system with spare parts and service. Also completed rewind of Unit 1 field because of turn-to-turn short in windings.
IGS04-04	00-98972-00	Apr-07	AQCS Air Washers	690	Installed pre-coolers on the AQCS building HVAC Condensing units to improve performance during hot days. Also installed new roll-up door into electrical rooms.
IGS00-17	99-77886-00	Oct-06	Submersible Boiler Area Sump Pumps	110	Replaced cantilevered boiler area sump pumps with submersible pumps to reduce maintenance costs.
IGS99-05	98-12822-00	Aug-06	Taylor Chart Recorder Upgrade	299	Replaced mechanical strip chart recorders with CRT screen devices with electronic storage capability. Mechanical strip charts were maintenance intensive and storage of paper charts was inefficient.
IGS05-11	06-83407-00	Jun-06	Sludge Conditioning Dust Control	398	Installed dust control equipment at sludge conditioning to reduce amount of dust in building
IGS04-08	04-16783-0	May-06	Unit Oxygen Probe Replacement System	602	Replaced boiler oxygen probes used to control excess air for combustion because the existing probes were unreliable and took excessive amounts of time to calibrate and maintain.
IGS05-02	04-29698	May-06	Replace Unit and Essential Service Battery Chargers	200	Replaced unit and essential service battery charges on one unit because parts were no longer available from the original manufacturer. Used the removed parts to maintain the other unit.
IGS03-02	03-96032-0	May-06	Air Heater Element Replacement	4,224	Replaced secondary air heater elements with Air Preheater Company's (Alstom) ClearFlow technology which improves heat transfer and improves plant efficiency.
IGS04-06	03-04076-0	Apr-06	Replace Generating Station Digital Fault Recorders	152	Replaced digital fault recorders on both units because parts were no longer available from the manufacturer for maintenance.
IGS04-12	99-50459-0	Apr-06	Cooling Tower Riser Platforms	291	Replaced corroded cooling tower platforms with fiberglass platforms due to concerns over employee safety while working on the platforms.
IGS04-13	03-97670-0	Apr-06	Trolley Beams for CCCW Pumps & Motors	154	Installed lifting beams over the Closed Cycle Cooling Water Pumps to eliminate safety hazards while replacing the pumps and motors.
IGS05-05	03-95523-0	Apr-06	Burner Line Balancing Equipment	560	Installed adjustable burner line balancing dampers on all burner feed lines. Necessary to balance flow to individual burners for boiler combustion optimization.
IGS07-10	07-05627-0	Mar-06	Replace Opacity Monitors	107	Replaced obsolete opacity meters on both units because existing meters were obsolete and no longer supported by manufacturer.
IGS04-22	05-47881-00	Dec-05	Ash Water Recycle Ph Isolation Provisions	109	Moved acid feed from suction side of pumps to discharge side of pumps so acid feed could be isolated from pump for maintenance.
IGS04-24	05-54119-00	Sep-05	Acid Feed for SCU Elimination	281	Replaced acid feed pumps for circulating water system to higher capacity so system could be operated without cold lime softening in the event of an emergency.
IGS04-26	05-62308	Jul-05	Convert SCU 1C to Ash Water Make-up Storage	296	Installed piping so that SCU 1C which was not being utilized could be used to store ash water.
IGS03-10	03-96057-0	May-05	AQCS HVAC Capacity Improvement	125	Modified the AQCS HVAC to separate the first and second floors duct work. This was necessary because Halon fire protection was removed from the first floor.

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IGS01-14	01-19256-00	Apr-05	Replace Bentley-Nevada Vibration Systems	1,079	Replaced vibration monitoring systems that were obsolete and no longer supported by manufacturer with parts.
IGS04-16	00-90467-00	Apr-05	Cooling Tower Stack Repair	1,234	Structural repair of cooling tower fan stacks to prevent concrete from spalling off and damaging fan blades.
IGS02-12	02-60953-0	Feb-05	Scrubber Forced Oxidation	5,310	Installed forced oxidation in the scrubber reaction tanks to preclude the formation of sulfite/sulfate mixed scale. Also needed to improve dewatering of scrubber sludge.
IGS03-07	03-86336-0	Oct-04	Water Treatment Conductivity Replacement	140	Replaced conductivity meters in water treatment because the existing model of probes was obsolete and no longer supported by the manufacturer.
IGS02-09	02-53674-0	Jun-04	Replace U2 PA Flow Instrumentation	285	Replaced Primary Air flow pitot tubes and sensors on both units. Existing sensors eroded and were inaccurate.
IGS02-03	02-53672-0	May-04	Generator Step-Up Transformer Cooling Modifications	520	Replaced transformer coolers to increase heat rejection capacity.
IGS02-14	02-60456-0	May-04	Boiler Modifications	9,150	Installed additional tubing to platen superheaters and over fire air system for both units. Part of plant capacity uprate project.
IGS03-04	03-96033-0	May-04	Unit 2 Burner Modifications	4,500	Replaced Unit 2 burners due to warping of the register components and backplates which prevented burner adjustment and balancing.
IGS01-21	02-53673-0	May-04	Isolated Phase Bus Duct Cooling	220	Installed forced air cooling on the isolated phase bus duct for both units. Part of the plant capacity uprate project.
IGS01-19	01-31731-00	May-04	Scrubber Wall Ring Modification	1,184	Installed wall rings around the outside walls of each scrubber module just below the first rows of spray headers to push the flue gas into spray patterns and improve removal efficiency. Part of the plant capacity uprate project.
IGS01-08	01-18579-00	Apr-04	Scrubber Outlet Modifications and Rebuild	9,068	Replaced scrubber drift eliminator panels and repaired corrosion in the scrubber outlet duct area.
IGS03-08	03-85783-0	Apr-04	Upgrade CEM Software to 32 Bit Version	120	Upgraded the software for the Continuous Emissions Monitoring (CEM) system because the hardware which would run the previous version of the software was obsolete and parts could not be obtained to maintain it.
IGS01-10	01-19106-00	Oct-03	GSB Air Conditioning Upgrade	439	Installed additional air conditioning in the General Services Building. Existing system was not designed for current occupancy and building use.
IGS01-05	01-19127-00	Aug-03	Ash Water Scale Inhibition	186	Installed acid feed system, tank and containment basin. Needed to reduce pH of Ash Water to prevent scaling in system.
IGS02-04	02-53671-0	Aug-03	Generator Monitoring	500	Installed stator leak monitoring equipment on both units.
IGS01-15	00-14112-00	Jun-03	BFP Torquemeter Replacement	182	Replaced Boiler Feed Pump (BFP) torque/horsepower meters because parts were no longer available from the manufacturer to maintain.
IGS02-02	02-60477-00	Jun-03	Helper Cooling Tower	6,012	Installed a new Helper Cooling Tower for each unit to increase the heat rejection capacity. Part of the plant capacity uprate project.
IGS01-02	01-19846-00	May-03	HP Turbine Dense Pack Modification	10,010	Changed the existing double-flow high pressure (HP) nozzle box to a single flow design. This made room in the turbine for additional stages and increased section efficiency. Part of plant capacity uprate project.
IGS01-06	01-19099-00	May-03	Increase Circulating Water Make-Up Capacity	126	Installed larger motors and variable speed drives on the Circulating Water Make-up pumps. Scaling in the feed line reduced capacity and original design of the drive was marginal.
IGS01-07	00-83938-00	May-03	Transformer Bushing Monitoring System	110	Installed bushing monitoring system on the Generator Step-up Transformers on both units. Early warning of bushing failure to prevent catastrophic failure of transformer.
IGS01-17	00-07718-00	May-03	Retractable Packing for IP Turbine	460	Installed adjustable packing on the Intermediate Pressure (IP) Turbine sections on both units to reduce interstage leaking and improve section efficiency.
IGS00-03	00-90467-00	Apr-03	Cooling Tower Rehabilitation	820	Repaired spalled sections of concrete deck and coated decks with epoxy coating to prevent further corrosion of concrete reinforcement.
IGS01-18	01-31730-00	Apr-03	Increase Boiler Safety Relief Capacity	165	Replaced an existing electromechanical relief valve on each unit with a standard spring operated safety valve. This increased the relieving capacity of the boiler to be in compliance with ASME boiler code when operating and uprated load. Part of plant capacity uprate project.

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IGS01-23	02-49452-00	Apr-03	Boiler Feed Pump Re Rate	862	Replaced boiler feed pump volutes on all four steam driven pumps to increase capacity and efficiency. Part of the plant capacity uprate project.
IGS01-24	00-79858-0	Apr-03	6A, 6B Heater Drain Line Modification	120	Modified the routing of High Pressure 6A and 6B drain piping to the flash tanks and moved the control and isolation valves in order to reduce or eliminate excess movement due to flashing in the lines.
IGS02-08	02-53066-00	Apr-03	Replace Admin Building Condensing Units	202	Replaced Administration Building HVAC condensing units because maintenance costs were starting to escalate.
IGS98-03	98-11838-00	Apr-03	Modicon Upgrade	1,810	Replaced obsolete Modicon control systems in various locations and used removed parts as spares to maintain other systems.
IGS00-24	00-14784-00	Mar-03	Boiler Flame Camera Replacement	130	Replaced boiler flame cameras on both units because parts were no longer available from the manufacturer.
IGS00-21	00-97572-00	Aug-02	Submersible Scrubber Sump Pumps	142	Replaced cantilevered scrubber drain sump pumps with submersible pumps to reduce maintenance costs.
IGS00-23	99-64615-00	Aug-02	Coal Feeder Controller Replacement	120	Replaced coal feeder controls with their newer versions because the manufacturer stopped supporting the existing design with parts and service.
IGS99-13	99-64562-00	Jun-02	Scrubber Inlet Modifications	2,367	Removed the refractory lining from the duct, repaired corroded areas, and cladded the inlet shelf with high nickel alloy (Hastelloy 2000). Also installed a shelf wash system to sweep material from the shelf during operation. Needed to insure that the inlet gate to the module can be closed and isolated for maintenance.
IGS00-16	00-84716-00	Jun-02	HP Turbine Drain Valves	130	Replaced turbine drain globe valves with severe service ball valves and quarter-turn actuators. Eliminated heat rate penalty from leaking valves.
IGS00-20	00-84639-00	Mar-02	Additional Sootblowers	653	Installed six additional long lance sootblowers in both units. Two sootblowers below the intermediate superheat pendants and four in the horizontal reheat section. Reduced boiler flue gas outlet temperature and improved boiler efficiency.
IGS00-11	00-84737-00	Sep-01	Pulverizer Rejects System Modifications	410	Upgraded the reject holding box, reject transfer box, jet pump and transfer lines within the existing bottom ash equipment to increase capacity of rejects handling. Also installed self-cleaning rejects hoppers for safer handling of oversized materials.
IGS00-07	00-85332-00	Aug-01	Baghouse Opacity Monitors	181	Replaced baghouse outlet opacity meters because the original manufacturer no longer supported with parts and service.
IGS95-06	95-82649-00	Aug-01	Strainers for Scrubber Recycle Pumps	460	Installed discharge strainers on scrubber spray pumps to reduce the maintenance cost of cleaning debris from scrubber spray nozzles.
IGS00-25	01-19115	May-01	Battery Replacement Project	250	Replaced station and essential service batteries on both units because they would no longer hold an adequate charge to handle all emergency situations.
IGS00-09	00-85387-0	Apr-01	U1 Sootblower Control System	105	Replaced sootblowing control system because the existing system was obsolete and no longer supported by the manufacturer
IGS99-14	99-50451-01	Jan-01	PE Air Line Replacement	158	Replaced Drisco pipe underground air lines which were failing from oxidation and weakening of the plastic structure of the pipe.
IGS94-06	96-29287-00	Jun-00	Rotary Plow Modifications	400	Replaced hydraulic drives on all eight rotary plow feeders with electronic variables speed drives to improve plow reliability and reduce maintenance costs.
IGS96-11	96-14889-00	Jun-00	PI Migration Project	265	Replaced obsolete information and historian systems and moved them to the integrated PI information handling system. Existing systems were obsolete and no longer supported by manufacturer
IGS99-16	99-50450-00	Jun-00	Site Roof Rehab Program	164	Replaced some gravel-tar roofs with membrane roofs.
IGS97-16	98-12941-00	Apr-99	Bottom Ash Hopper Modifications	120	Modified bottom ash cooling wall cooling weir to eliminate the potential for cold water splashing on the lower water wall header causing thermal stresses.
IGS97-11	98-11838-00	Jun-98	Modicon Upgrade	155	Replaced obsolete Modicon control systems in various locations and used removed parts as spares to maintain other systems.
IGS91-07	91-00319-00	Sep-97	Cooling Tower Instrumentation Upgrade	134	Installed additional instrumentation for monitoring cooling tower performance and maintaining plant heat rate.

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IGS96-10	96-19996-00	Jun-97	Replace Prime Computer Hardware	332	Replaced obsolete Prime computer system used for business functions with a new DEC computer system.
PM 42	NA	Oct-96	Install Large Clrc Water Acid Pumps	118	Replaced acid pumps for circulating water with different pumps to increase capacity and improve reliability.
IGS94-18	93-10036-00	Jul-96	Dust Collector and Plenum Fan Vibration Protection	235	Installed vibration instrumentation on the large fans with the potential of injuring an employee in the event of a blade failure.
IGS92-19	NA	Jun-96	Continuous Emissions Monitoring	1,830	Modified existing and installed additional continuous emissions monitoring equipment to meet the requirements of the Acid Rain Program.
IGS92-20	NA	Jun-96	Combustion Gas Reheat Removal	2,936	Modified scrubber and stack for operation without combustion gas reheat. Improved plant heat rate.
IGS93-17	94-28917-00	Jun-96	Upgrade PI System to "Alpha" System	200	Upgraded DEC computer used for plant information system to Alpha AXP system to increase capacity and reliability of the PI system.
IGS93-04	90-76866-00	Jun-95	HP Heater Drain Pipe Vibration	146	Installed additional restraints on HP Heater drain lines to eliminate vibration concerns.
IGS93-20	93-79840-00	Jun-95	Condenser Diagnostic Instrumentation Upgrade	218	Installed instrumentation for monitoring condenser performance and for diagnosing problems.
IGS94-17	93-81621-00	Jun-95	Redesign Wash Down Water System	182	Modified wash down water to come off of the fire water storage tanks instead of recovered water. Resolved health concerns with using recovered water in human contact.
IGS94-19	92-46010-00	Jun-95	Waterproof Heaters in Sludge Transfer Building	120	Installed waterproof heaters in the sludge transfer building. Water from frequent washdowns was damaging heater elements and switches.
PM 9	NA	Jan-95	Uninterruptible Power Supplies	N.A.	Installed uninterruptible power supplies for control systems in scrubber to facilitate safe shutdown of the units in the event of black trip
IGS89-01	NA	Jul-94	Replaced Variable Speed Drives in Control and Scrubber Building	119	Replaced six variable speed drives for scrubber HVAC that were obsolete when they were installed.
IGS92-02	90-52938-00	Jun-94	Modify AQCS HVAC	250	Installed additional cooling capacity for the AQCS Electrical rooms due to concerns with overheating of transformers in the rooms and other control devices.
IGS92-17	91-97693-00	Jun-94	Fabric Filter Sonic Horns	2,159	Installed sonic horns in all fabric filter compartments to assist with bag cleaning and to reduce baghouse differential pressure. Improved plant net heat rate.
IGS93-15	93-78951-00	Jun-94	Document Storage System	155	Installed electronic document storage system for long term storage of IPSC critical documents.
IGS93-16	93-78901-00	Jun-94	Plant Information System (PM 276)	330	Installation of plant information system so that critical plant operating parameters can be maintained in a historian and available for viewing on plant network.
IGS93-25	91-85736-00	May-94	Modify Construction Power Grid	181	Upgraded the construction power grid to make parts of the system more permanent since some critical plant systems were running on this power source.
IGS92-04	92-34497-00	Dec-93	Configuration of Bailey and CCS for Burner Line Purging	250	Installed hardware and software in Burner Management System to allow sweeping of the burner lines during start-ups and shutdown. Reduced quantity and severity of burner line fires.
IGS91-15	91-86367-00	Jun-93	Modify Turbine Lube Oil Centrifuge Heaters	195	Replaced turbine lube oil centrifuge heaters because the original heaters were unreliable and had high maintenance costs.
IGS91-2	91-88310-00	Jun-93	Deaerator Erosion Control	388	Installed cladding in the deaerator and flash tanks for heater drains to eliminate rapid erosion of the vessel walls that was occurring from flashing steam.
PM 211	NA	Jun-93	Conveyor 6 Wind Break Partition	N.A.	Installed windbreak along side of Coal Conveyor 6 to prevent the wind from blowing the belt out of misalignment.
PM 33	NA	Jun-93	Coal Handling Hoists	187	Additional hoists added to facilitate maintenance of coal yard
PM 356	NA	Jul-92	Water Leakage in Coal Handling Buildings	211	Water proofed coal yard buildings and sloped floors to prevent damage from washdowns.
IGS91-04	91-89210-00	Jun-92	Boiler Drum Level Transmitter	187	Replaced fiber optic drum level transmitter because of unreliability and high maintenance costs. Replaced with conductivity type transmitter.
PM 130	NA	Jun-92	Redesigned Vacuum System	939	Redesigned vacuum system used for clean-up on both units. The initial system did not have enough capacity.
PM 212	NA	Jun-92	Vacuum System In Coal Unloading	147	Installed vacuum system piping in coal unloading building to use for clean-up.

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Project #	W.O. #	Completion Date	Title	Budget (\$1,000's)	Short Description of Work
PM 213	NA	May-92	Dust Control at Limestone Unloading	429	Installed building and dust collectors over Limestone Unloading Hopper to reduce fugitive dust.
IGS91-3	91-89200-00	Apr-92	Burner Modifications and Replacement	3,656	Replaced Unit 1 burners and modified Unit 2 burners. This was a warranty item from original construction. Partially paid for by Babcock and Wilcox. Burner registers warped and would not operate so structural design of burners was modified to allow for thermal expansion. Unit 1's burners were so bad that they had to be replaced. Unit 2's burners were repaired and modified. Performance of the burner was not altered.
PM 34	NA	Apr-92	Sludge Conveyor Modifications	135	Replaced original metal chutes on sludge conveyors with rubber flexible tubes to prevent pluggage.
PM 134	NA	Mar-92	Recoat Condenser Water Boxes	297	Coated condenser water boxes on both units with epoxy. Original coal tar epoxy had failed.
PM 142	NA	Jul-91	Modified Thickener Feed System in Sludge Conditioning	121	Installed variable speed drives on the feed system to the sludge thickeners to control the level in the feed tank.
PM 143	NA	Jul-91	Modify Thickener Underflow Piping	217	Replaced thickener underflow lines with smaller diameter piping to increase line velocity and reduce pluggage.
PM 284	NA	Feb-91	Provide Drainage in Tank Yard and Coal Yard	890	Lined ditches in the tank yard and coal yard to prevent soil erosion from water flows.
PM 295	NA	Feb-91	Filter Feed Tank Bypass Line	107	Installed piping to feed slurry direct from the thickener feed tank to the vacuum filters, bypassing the filter feed sump.
PM 245	NA	Jan-91	Thlrd Cold Lime Softener	841	Added additional third lime softener in water treatment to provide redundancy for maintenance purposes.
PM 254	NA	Nov-90	Investigate Pond Liner and Slope Failure	207	Installed expansion loops in pond liners above the water level to prevent rips during cold weather liner contraction.
PM/CMP 285	NA	Sep-90	Upgrade Construction Power Substations	349	Upgraded construction power substations to permanent design. System needed to supply power to some plant systems.
PM 115	NA	Jul-90	Modify Sump Pumps in Scrubber	220	Installed variable speed drives on scrubber sump pumps to prevent pumps from running dry on low level.
PM 67	NA	Jun-90	Relocate Electrical Shop to GSB 2nd Floor	349	Created a new shop for electrical technicians on the 2nd floor of the General Services Building.
PM 86	NA	Jun-90	Installed Reserve Auxilliary Transformer	2,199	Installed reserve auxilliary transformer and switching to supply auxiliary power to the station in the event of a black trip.
PM 132	NA	Apr-90	Coal Weather Dust Suppression	150	Modified dust suppression system in the coal handling to prevent it from freezing in cold weather.
PM 239	NA	Apr-90	Modify Rotary Plow Feeders	153	Installed flow meters on the rotary plow hydraulic lines as a feedback signal to control rotor speed.
PM 90	NA	Jan-90	Sludge Washdown Containment Ditch	211	Lined dirt embankment in front of sludge conditioning to contain washdown water and prevent soil erosion.

Narrative:

- Document was prepared by Jerry Hintze with assistance from Dean Wood and Ken Nielson
- The information on capital projects budgeted and completed by IPSC was compiled from IPSC annual budgets.
- The information on projects completed by the Construction Management Group was obtained from a cost report dated November 24, 1992.
- The completion date in most cases is the date the modification was placed into service. If that date was not available, it is the date the documentation was completed and project closed.
- NA indicates that the information never existed or is currently not available.